WASTE MANAGEMENT

WASTE MANAGEMENT
601 Madison Road
East St Louis, IL 62201
(618) 271-6788
(618) 271-1227 Fax

July 8, 2016

Mr. Eric Jones, Manager
Illinois Environmental Protection Agency
Bureau of Air – Compliance Section #40
1021 North Grand Avenue East
Springfield, Ill 62702

163075AAL – St. Clair County
Cottonwood Hills Recycling and Disposal Facility

NSPS Semi-Annual Report for Period January 1, 2016 to July 30, 2016

Dear Mr. Jones:

This letter transmits the NSPS Semi-Annual Report for the above referenced reporting period at the above referenced facility.

If you have any questions or require additional information, please call me at (314) 568-2025.

Sincerely,
Waste Management of Illinois, Inc.

Ernest H Dennison, PE
District Engineer

SIGNATURE BLOCK FOR RESPONSIBLE OFFICIAL

I, the undersigned, hereby certify under penalty of law that I am a responsible official and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.

BY: _____ Date 7/8/16

Ernest Dennison
Typed or Printed Name of Signatory

District Engineer
Title of Signatory

cc: IEPA – Collinsville Field Office
2009 Mall Street
Collinsville, Illinois 62234

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL -- PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: _____ / _____ / _____
Page _____ of _____
Source Designation: _____

COMPLIANCE AND GENERAL REPORTING FORM	***FOR AGENCY USE ONLY***
	ID NUMBER:
	PERMIT #:
	DATE:

THIS FORM IS USED FOR EITHER OF THE FOLLOWING:

- TO REPORT AND CERTIFY COMPLIANCE OF AN ENTIRE SOURCE OR SPECIFIC ITEMS OF EQUIPMENT WITH ALL APPLICABLE REQUIREMENTS DURING A REPORTING PERIOD, OR
- TO IDENTIFY AND ENSURE PROPER PROCESSING OF A SUBMITTED REPORT. THIS FORM SHOULD BE USED AS THE COVER SHEET OF THE SUBMITTED REPORT.

SOURCE INFORMATION

1) SOURCE NAME:
Cottonwood Hills Recycling and Disposal Facility

2) DATE FORM PREPARED:	3) SOURCE ID NO. (IF KNOWN):
July 2016	**163075AAL**

GENERAL INFORMATION

4) INDICATE FOR WHICH OF THE FOLLOWING THIS FORM IS BEING COMPLETED:

☒ **TO REPORT AND CERTIFY COMPLIANCE OF THE SOURCE OR SPECIFIC ITEMS OF EQUIPMENT WITH ALL APPLICABLE REQUIREMENTS**

☐ **TO IDENTIFY AND ENSURE PROPER PROCESSING OF A SUBMITTED REPORT**

5) PERIOD COVERED BY THIS REPORT:

FROM: 01 / 01 /2016 TO: 06/ 30 / 2016

6) NAME AND PHONE NUMBER OF PERSON TO CONTACT FOR QUESTIONS REGARDING THIS REPORT:

NAME: **Ernest Dennison** TITLE: **District Engineer**

PHONE#: **(314) 568-2025**

THIS AGENCY IS AUTHORIZED TO REQUIRE THIS INFORMATION UNDER ILLINOIS REVISED STATUTES, 1991, AS AMENDED 1992, CHAPTER 111 1/2, PAR. 1039.5. DISCLOSURE OF THIS INFORMATION IS REQUIRED UNDER THAT SECTION. FAILURE TO DO SO MAY PREVENT THIS FORM FROM BEING PROCESSED AND COULD RESULT IN THE APPLICATION BEING DENIED. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

FOR APPLICANT'S USE
_____

APPLICATION PAGE _____

WM01668

COMPLIANCE OF SOURCE OR EQUIPMENT DURING REPORTING PERIOD

- COMPLETE ITEM 7 BELOW IF THIS FORM IS BEING USED TO REPORT AND CERTIFY COMPLIANCE OF THE ENTIRE SOURCE.
- COMPLETE ITEM 8 BELOW IF THIS FORM IS BEING USED TO REPORT AND CERTIFY COMPLIANCE OF SPECIFIC ITEMS OF EQUIPMENT ONLY.

7) WAS THE SOURCE IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS FOR THE ENTIRE REPORTING PERIOD? [X] YES [ ] NO

IF YES, THEN THE "REPORT INFORMATION" SECTION ON PAGE 3 OF THIS FORM DOES NOT NEED TO BE COMPLETED.

IF NO, THEN COMPLETE AND SUBMIT FORM CAAPP-405 -"EXCESS EMISSIONS, MONITORING EQUIPMENT DOWNTIME, AND MISCELLANEOUS REPORTING FORM."

8a) LIST THE EMISSION UNIT(S) AND CONTROL EQUIPMENT FOR WHICH THIS FORM IS BEING COMPLETED TO REPORT AND CERTIFY COMPLIANCE WITH (IF ADDITIONAL SPACE IS NEEDED FOR ITEM 10, ATTACH AND LABEL AS EXHIBIT 400-A):

See Attached Report.

b) IDENTIFY THE APPLICABLE REQIREMENT(S) FOR WHICH THIS FORM IS BEING USED TO REPORT AND CERTIFY COMPLIANCE WITH:

See Attached Report.

c) IDENTIFY THE APPLICABLE REQIREMENT(S) WHICH REQUIRE THAT THIS REPORT OR CERTIFICATION BE SUBMITTED:

Semi-Annual NSPS Report

d) WERE THE ABOVE REFERENCED ITEMS IN 8(a) IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS FOR THE ENTIRE REPORTING PERIOD? [X] YES [ ] NO

IF YES, THEN THE "REPORT INFORMATION" SECTION ON PAGE 3 OF THIS FORM DOES NOT NEED TO BE COMPLETED.

IF NO, THEN COMPLETE AND SUBMIT FORM CAAPP-405 - "EXCESS EMISSIONS, MONITORING EQUIPMENT DOWNTIME, AND MISCELLANEOUS REPORTING FORM."

REPORT INFORMATION

9) TITLE OF REPORT BEING SUBMITTED:

NSPS Semi-Annual Report

10) IDENTIFY THE APPLICABLE REQIREMENT(S) WHICH REQUIRES THIS REPORT (IF APPLICABLE):

40 CFR 60.757(f) NSPS

11) BRIEFLY EXPLAIN WHAT THIS REPORT COVERS:

This Semi-Annual NSPS Report is a summary of any exceedences of monitored parameters, periods of downtime for gas collection/control devices, and any expansions/modifications to the gas collection system.

12) ATTACH THE REPORT TO THIS FORM.

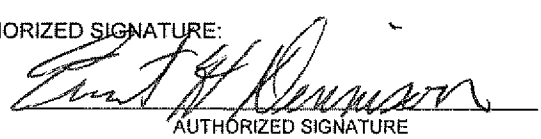
See Attached Report

SIGNATURE BLOCK

NOTE: THIS CERTIFICATION MUST BE SIGNED BY A RESPONSIBLE OFFICIAL. APPLICATIONS WITHOUT A SIGNED CERTIFICATION WILL BE RETURNED AS INCOMPLETE.

13) I CERTIFY UNDER PENALTY OF LAW THAT, BASED ON INFORMATION AND BELIEF FORMED AFTER REASONABLE INQUIRY, THE STATEMENTS AND INFORMATION CONTAINED IN THIS APPLICATION ARE TRUE, ACCURATE AND COMPLETE.

AUTHORIZED SIGNATURE:

BY: 

AUTHORIZED SIGNATURE

DISTRICT ENGINEER
TITLE OF SIGNATORY

ERNEST H DENNISON
TYPED OR PRINTED NAME OF SIGNATORY

7 / 8 / 16
DATE

APPLICATION PAGE _____

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400-CAAPP

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF AIR POLLUTION CONTROL – PERMIT SECTION
P.O. BOX 19506
SPRINGFIELD, ILLINOIS 62794-9506

FOR APPLICANT'S USE
Revision #: _____
Date: ____ / ____ / ____
Page _____ of _____
Source Designation: _____

DELEGATION OF AUTHORITY FOR RESPONSIBLE OFFICIAL TO A REPRESENTATIVE

FOR AGENCY USE ONLY
ID NUMBER:
PERMIT #:
DATE:

THIS FORM SHALL BE USED BY A RESPONSIBLE OFFICIAL TO DELEGATE AUTHORITY TO A REPRESENTATIVE OF SUCH PERSON FOR SIGNATURE ON APPLICATIONS OR CERTIFICATION OF REPORTS TO BE SUBMITTED PURSUANT TO THE CLEAN AIR ACT.

THIS FORM SHALL ONLY BE USED FOR A CORPORATION AT WHICH A PRESIDENT, SECRETARY, TREASURER, OR VICE-PRESIDENT OF THE CORPORATION IN CHARGE OF BUSINESS FUNCTION, OR ANY OTHER PERSON WHO PERFORMS SIMILAR POLICY OR DECISION MAKING FUNCTIONS FOR THE CORPORATION TO TRANSFER THE AUTHORITY AS A RESPONSIBLE OFFICIAL TO A REPRESENTATIVE OF SUCH PERSON. THE REPRESENTATIVE OF SUCH PERSON MUST BE RESPONSIBLE FOR THE OVERALL OPERATION OF ONE OR MORE MANUFACTURING, PRODUCTION, OR OPERATING FACILITIES APPLYING FOR OR SUBJECT TO A PERMIT.

NOTE: THIS TRANSFER OF DELEGATION OF AUTHORITY IS APPLICABLE ONLY IF THE FACILITY EMPLOYS MORE THAN 250 PERSONS OR HAS A GROSS ANNUAL SALES OR EXPENDITURES EXCEEDING $25 MILLION (IN SECOND QUARTER 1980 DOLLARS).

SOURCE INFORMATION

1) SOURCE NAME: Cottonwood Hills Recycling and Disposal Facility

2) DATE FORM PREPARED:	3) SOURCE ID NO. (IF KNOWN):
1/21/16	163075AAL

TRANSFER OF AUTHORITY

4) I, THE UNDERSIGNED, BEING A PRESIDENT, SECRETARY, TREASURER, OR VICE-PRESIDENT OF THE CORPORATION IN CHARGE OF BUSINESS FUNCTION, OR OTHER PERSON WHO PERFORMS SIMILAR POLICY OR DECISION MAKING FUNCTIONS FOR THE CORPORATION, HEREBY TRANSFER THE AUTHORITY AS A RESPONSIBLE OFFICIAL TO Ernest H Dennison, THEY BEING A REPRESENTATIVE AND RESPONSIBLE FOR THE OVERALL OPERATION OF ONE OR MORE MANUFACTURING, PRODUCTION, OR OPERATING FACILITIES APPLYING FOR OR SUBJECT TO A PERMIT.

Brian S Roth
AUTHORIZED SIGNATURE

Vice President and Assistant Secretary
TITLE OF SIGNATORY

Brian S. Roth
TYPED OR PRINTED NAME OF SIGNATORY

January 21 2016
DATE

Ernest H Dennison
DELEGATED REPRESENTATIVE

District Engineer
TITLE OF DESIGNATED REPRESENTATIVE

THIS AGENCY IS AUTHORIZED TO REQUIRE THIS INFORMATION UNDER ILLINOIS REVISED STATUTES, 1991, AS AMENDED 1992, CHAPTER 111 1/2, PAR. 1039.5. DISCLOSURE OF THIS INFORMATION IS REQUIRED UNDER THAT SECTION. FAILURE TO DO SO MAY PREVENT THIS FORM FROM BEING PROCESSED AND COULD RESULT IN THE APPLICATION BEING DENIED. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

FOR APPLICANT'S USE
_____

APPLICATION PAGE _____

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500-CAAPP

WM01671

COTTONWOOD HILLS
RECYCLING AND DISPOSAL FACILITY

NSPS SEMI-ANNUAL REPORT

For the Reporting Period
01/01/16 to 06/30/16

Prepared By
Waste Management of Illinois, Inc.

July 2016

1.0 Introduction

This document consists of the semi-annual report for Cottonwood Hills Recycling and Disposal Facility in Marissa, Illinois and has been prepared in accordance with 40 CFR 60.757(f). This report covers the period of gas system operations from January 1, 2016 to June 30, 2016.

Documented in this report are exceedances of monitored parameters under 40 CFR 60.756, periods of downtime for gas collection/control devices, and any expansions/modifications to the gas collection system during the reporting period. The report is organized into three main sections: Collection systems, Control Devices and Landfill.

The gas collection system currently operating at the landfill consists of 26 vertical gas collection wells and temporary gas collection trenches. One gas collection well (MW17) is temporarily inactive as gas is controlled in that area by other gas collection wells (See Attachment 2 for information and radius of influence calculations). The wells and trenches are connected to the gas collection laterals and header pipe which leads to a 3000 scfm open flare (control device).

The gas mover equipment is comprised of a blower at the flare station.

2.0 Collection System Summary

2.1 Exceedance of Monitored Parameters

Gauge Pressure at each Gas Collection Wellhead (40 CFR 60.756 (a)(1))

- Report all instances of positive pressure measured at the gas collection header of each individual wellhead, including value and length of time measured.
- Per 40 CFR 60.753 (b), record instances when positive pressure occurred at a wellhead in an effort to avoid a landfill fire.

Based on a review of the data and discussions with the gas technician Mike McElvain, any positive pressure exceedances which were detected had a corrective action (adjusted wellhead vacuum) initiated within 5 days and was fixed within 15 days, additional correction action, have a variance request (approved or pending), or had the well and/or system header repaired/replaced within 120 days (system expansion). Therefore, these wells are considered to be in compliance (See Exceedence Report in Attachment 1).

Monthly Oxygen or Nitrogen Concentration at Each Gas Collection Wellhead (40 CFR 60.756(a)(2))

- Report all instances, on a per well basis, when nitrogen concentrations exceeded 20% or oxygen concentrations exceed 5%. Report date, value and length of time of each exceedance.
- Detail action taken within 5 days to correct exceedance. Report date that exceedance was corrected (must be less than 15 days).

Based on a review of the data and discussions with the gas technician Mike McElvain, any oxygen reading in excess of the regulatory limits of 5% had a corrective action (adjusted wellhead vacuum) initiated within 5 days and was fixed within 15 days, additional correction action, have a variance request (approved or pending), and/or had the well and/or system header repaired/replaced within 120 days (system expansion). Therefore, these wells are considered to be in compliance (See Exceedence Report in Attachment 1).

Temperature of the landfill gas at each wellhead (40 CFR 60.756(a)(3))

- Report all instances, on a per well basis, when landfill gas temperature exceeded 55°C (131°F).
- Detail action taken within 5 days to convert exceedance. Report date that exceedance was corrected (must be less than 15 days).

There were some instances of a temperature exceeding 131°F as measured at the wellhead during the reporting period (See Exceedence Report in Attachment 1). Based on a review of the data and discussions with the gas technician Mike McElvain, these wells had a corrective action (adjusted wellhead vacuum) initiated within 5 days and were fixed within 15 days, had additional correction action, have a variance request (approved or pending), and/or had the well and/or system header repaired/replaced within 120 days (system expansion). Therefore, these wells are considered to be in compliance. See Attachment 2 for approved variances or pending requests.

2.2 Record of Operation

Description and duration of all periods when the gas stream from the collection system was diverted from the control device through a bypass line (40 CFR 60.756(b)(2)) for enclosed flare, engines or turbines, or 40 CFR 60.756(c) for utility flares).

The gas collection system at Cottonwood Hills RDF does not have a bypass line. Therefore, there were no periods of time that flow was diverted through a bypass line. All flow was directed to the permitted control device (open flare).

Description and duration of all periods when the collection system was not operating for more than 5 days.

There was no period of time during which the collection system was not operating for more than 5 days during the reporting period.

2.3 Record of Expansion

Date and location of all newly installed wells or collection system expansion (40 CFR 60.757(f)(6)).

There were no new gas collection wells installed during the reporting period. Additional gas wells and header piping are currently being installed and construction began in July 2016 (information will be provided with the next NSPS Semi-Annual Report).

3.0 Control Device Summary

3.1 Monitored Parameters

Flare Flame (Utility Flare)

- Report all periods of flare flame absence (40 CFR 60.758(c)(4)).

The open flare at Cottonwood Hills RDF is equipped with a thermocouple to continuously determine that a flame is present via temperature. Upon loss of flame (drop in temperature), the blower is automatically shut down.

In addition, the blower inlet control valve is automatically closed to prevent uncontrolled discharge during a shutdown event. The lack of a flame at the flare is not indicative of an emissions exceedance, since the system will not operate when a flame is not present.

Flow (Utility Flare)

- Report all periods during which the control device was not operating for more than one hour; report duration of each event (40 CFR 60.757(f)(3)).

A Table of periods when the control device (open flare) was not operating for more than one hour is provided in Attachment 3. The downtime periods were determined using the flare flowmeter data as recorded on a SD card. No raw landfill gas was emitted through the control device during the downtime. Therefore, the control device did not allow emissions of raw landfill gas for more than one hour.

3.2 Performance Testing

Performance Test (Utility Flare)

- Complete initial performance test on the open flare in accordance with IEPA-BOA Construction Permit application number 06100058.

The initial performance test for the flare was submitted July 15, 2008. The new CAAPP Permit 01040051 only requires annual landfill gas testing for methane, total reduced sulfur, NMOC, and net heat content. Sampling (and subsequent testing) was conducted on April 25, 2016. Testing results are maintained in the site files.

4.0 Landfill Summary

4.1 Monitored Parameters

Surface Scan

- Report the location of each exceedance of the 500 ppm methane concentration, and the concentration recorded at each exceedance location (40 CFR 60.757(f)(5)).

The quarterly methane surface scans were conducted at the landfill by the gas technician(s) Mike McElvain and/or Brad Anderson. A Table of any exceedances noted in their surface emissions monitoring inspections is provided in Attachment 4. Any exceedances were corrected and re-monitored within the required timeframes.

Semi-Annual Sampling/Analysis

- Perform annual sampling and analysis of landfill gas entering the control system in accordance with IEPA-BOA CAAPP Permit 01040051.

Sampling and analysis of the landfill gas is required annually for methane, total reduced sulfur, NMOC, and net heat content. Sampling (and subsequent testing) was conducted on April 25, 2016. Testing results are maintained in the site files.

ATTACHMENT 1

5-15 EXCEEDANCE REPORT - Cottonwood Hills Landfill
Range: [illegible]-Jan-2015 to 30-Jun-2016
Report Generated: [illegible]

Exceedance at 0 to 5 days
Exceedance at 5 to 15 days
Exceedance at 15+ days
Returning to Non-Exceedance

Results for Oxygen (O2)

Range	Device ID	Monitoring Date/Time	Days Exceeded	% O2	% N2	Static Press	Gas Temp	Comments
0 to 5	CWHGT005	11/20/2015 2:05:05PM	Initial	20.6		-54.90	59.0	NSPS/EG CAI;Dec. Flow/Vac.;Pinched
0 to 5	CWHGT005	11/20/2015 2:05:05PM	Initial	20.6		-54.90	58.0	
0 to 5	CWHGT005	11/20/2015 2:08:18PM	0	20.2		-49.30	59.0	NSPS/EG CAI;Barely Open;Dec. Flow/Vac
0 to 5	CWHGT005	11/20/2015 2:08:18PM	0	20.2		-49.40	58.0	
0 to 5	CWHGT005	11/24/2015 12:03:12PM	4	19.3		-30.00	69.0	NSPS/EG CAI;Fully Closed;Dec Flow/Vac.,Pinched,Scheduled Repairs
0 to 5	CWHGT005	11/24/2015 12:03:12PM	4	19.3		-26.20	71.0	
5 to 15	CWHGT005	12/2/2015 1:32:14PM	12	16.1		-0.20	67.0	NSPS/EG CAI;Barely Open;Dec Flow/Vac.,Pinched,Scheduled Repairs
5 to 15	CWHGT005	12/2/2015 1:32:14PM	12	16.1		-0.10	66.0	
15+	CWHGT005	12/7/2015 [illegible]	17	15.2		[illegible]	[illegible]	NSPS/EG CAI;Barely Open;Dec Flow/Vac.;Bad Cover Integrity
15+	CWHGT005	12/7/2015 [illegible]	17	15.2		[illegible]	[illegible]	
15+	CWHGT005	1/27/2016 [illegible]	68	[illegible]		[illegible]	[illegible]	NSPS/EG CAI;Barely Open;Dec Flow/Vac
15+	CWHGT005	1/27/2016 [illegible]	68	[illegible]		[illegible]	[illegible]	
OK	CWHGT005	1/27/2016 3:37:24PM	68					NSPS/EG Corrective Action Completed (CAC)
OK	CWHGT005	1/27/2016 3:37:24PM	68					
0 to 5	CWHGT005	2/22/2016 1:56:05PM	Initial	15.5		-56.70	47.0	NSPS/EG CAI;Dec. Flow/Vac. Barely Open
0 to 5	CWHGT005	2/22/2016 1:56:05PM	Initial	15.5		-56.70	46.0	
0 to 5	CWHGT005	2/22/2016 2:00:37PM	0	15.4		-56.50	45.0	Dec. Flow/Vac.;Fully Closed
0 to 5	CWHGT005	2/22/2016 2:00:37PM	0	15.4		-56.60	45.0	
0 to 5	CWHGT005	2/22/2016 2:04:23PM	0	17.3		-56.50	48.0	NSPS/EG CAI;Dec. Flow/Vac.;Fully Closed;Scheduled Repairs
0 to 5	CWHGT005	2/22/2016 2:04:23PM	0	17.3		-56.50	49.0	
5 to 15	CWHGT005	3/3/2016 12:29:47PM	10	16.1		-34.10	49.0	NSPS/EG CAI;Barely Open;Dec Flow/Vac.,Pinched,Scheduled Repairs
5 to 15	CWHGT005	3/3/2016 12:29:47PM	10	16.1		-30.60	49.0	
15+	CWHGT005	4/14/2016 2:48:[illegible]PM	[illegible]	[illegible]		[illegible]	[illegible]	NSPS/EG CAI;Barely Open;Dec Flow/Vac.,Pinched,Scheduled Repairs
15+	CWHGT005	4/14/2016 2:48:[illegible]PM	[illegible]	[illegible]		[illegible]	[illegible]	
15+	CWHGT005	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	No Adj. Made
15+	CWHGT005	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	
OK	CWHGT005	5/10/2016 4:14:21PM	78					NSPS/EG Corrective Action Completed (CAC)
OK	CWHGT005	5/10/2016 4:14:21PM	78					

Results for Static Pressure

Range	Device ID	Monitoring Date/Time	Days Exceeded	Static Press ("H2O)	% O2	% N2	Gas Temp	Comments

WM01678

5-15 EXCEEDANCE REPORT: Cottonwood Hills Landfill
Range: [illegible]
Report Generated: [illegible]

Results for Gas Temperature

Range	Device ID	Monitoring Date/Time	Days Exceeded	Gas Temp (oF)	% O2	% N2	Static Press	Comments
0 to 5	CWHMW077	4/14/2016 2:26:34PM	Initial	136.3	0.0		-34.45	NSPS/EG CAI,Inc. Flow/Vac.,Surging
0 to 5	CWHMW077	4/14/2016 2:26:34PM	0	137.1	0.0		-37.63	NSPS/EG CAI,Inc. Flow/Vac.,Surging
0 to 5	CWHMW077	4/14/2016 2:30:34PM	0	137.6	0.0		-39.08	NSPS/EG CAI,Dec. Flow/Vac.,Surging
0 to 5	CWHMW077	4/14/2016 2:30:34PM	0	136.0	0.0		-33.55	NSPS/EG CAI,Dec. Flow/Vac.,Surging
5 to 15	CWHMW077	4/27/2016 12:32:13PM	13	131.2	0.0		-26.41	NSPS/EG CAI,Dec. Flow/Vac.,Orifice Size Wrong
OK	CWHMW077	4/27/2016 12:32:13PM	13	129.5	0.0		-24.93	NSPS/EG CAI,Dec. Flow/Vac.,Orifice Size Wrong
0 to 5	CWHMW077	5/9/2016 4:33:15PM	Initial	136.4	0.0		-30.94	NSPS/EG CAI,No Adj. Made
0 to 5	CWHMW077	5/9/2016 4:33:15PM	0	136.4	0.0		-30.94	NSPS/EG CAI,No Adj. Made
0 to 5	CWHMW077	5/10/2016 11:19:21AM	1	134.7	0.2		-31.89	NSPS/EG CAI,Inc. Flow/Vac.
0 to 5	CWHMW077	5/10/2016 11:19:21AM	1	135.0	0.2		-33.05	NSPS/EG CAI,Inc. Flow/Vac.
[illegible]	CWHMW077	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	NSPS/EG CAI,Dec. Flow/Vac.
[illegible]	CWHMW077	[illegible]	16	[illegible]	[illegible]		[illegible]	NSPS/EG CAI,Dec. Flow/Vac.
[illegible]	CWHMW077	6/1/2016 1:24:25PM	23	[illegible]	0.0		[illegible]	NSPS/EG CAI,Inc. Flow/Vac.,Adjusted for Odor/SEM
15+	CWHMW077	6/1/2016 1:24:25PM	[illegible]	[illegible]	[illegible]		[illegible]	NSPS/EG CAI,Inc. Flow/Vac.,Adjusted for Odor/SEM
15+	CWHMW077	[illegible]	53	[illegible]	[illegible]		[illegible]	NSPS/EG CAI,Inc. Flow/Vac.
15+	CWHMW077	[illegible]	53	[illegible]	[illegible]		[illegible]	NSPS/EG CAI,Inc. Flow/Vac.
OK	CWHMW077	7/7/2016 3:33:18PM	59					NSPS/EG Corrective Action Completed (CAC)
0 to 5	CWHMW081	5/9/2016 2:08:32PM	Initial	131.0	0.0		-4.77	NSPS/EG CAI,Dec. Flow/Vac.
OK	CWHMW081	5/9/2016 2:08:32PM	0	130.9	0.0		-4.77	NSPS/EG CAI,Dec. Flow/Vac.
0 to 5	CWHMW081	6/1/2016 2:10:28PM	Initial	133.6	0.0		-4.62	NSPS/EG CAI,Dec. Flow/Vac.
OK	CWHMW081	6/1/2016 2:10:28PM	0	130.9	0.0		-4.06	NSPS/EG CAI,Dec. Flow/Vac.
0 to 5	CWHMW20R	4/14/2016 2:07:24PM	Initial	131.9	0.0		-42.10	NSPS/EG CAI,Elev Temp Mitigation,Dec. Flow/Vac.
OK	CWHMW20R	4/14/2016 2:07:24PM	0	130.6	0.0		-32.06	NSPS/EG CAI,Elev Temp Mitigation,Dec. Flow/Vac.
0 to 5	CWHMW20R	5/9/2016 3:25:13PM	Initial	132.4	0.0		-28.25	NSPS/EG CAI,Dec. Flow/Vac.
OK	CWHMW20R	5/9/2016 3:25:13PM	0	130.9	0.0		-20.04	NSPS/EG CAI,Dec. Flow/Vac.
0 to 5	CWHMW20R	6/1/2016 1:41:19PM	Initial	132.2	0.0		-26.11	NSPS/EG CAI,Inc. Flow/Vac.,Adjusted for Odor/SEM
0 to 5	CWHMW20R	6/1/2016 1:41:19PM	0	132.4	0.0		-28.06	NSPS/EG CAI,Inc. Flow/Vac.,Adjusted for Odor/SEM
0 to 5	CWHMW20R	6/1/2016 1:43:25PM	0	132.2	0.0		-28.36	NSPS/EG CAI,No Adj. Made
0 to 5	CWHMW20R	6/1/2016 1:43:25PM	0	132.3	0.0		-28.37	NSPS/EG CAI,No Adj. Made

5-15 EXCEEDANCE REPORT - Cottonwood Hills Landfill
Range: [illegible] 2016
Report Generated: [illegible]

Range	Device ID	Monitoring Date/Time	Days Exceeded	Gas Temp (oF)	% O2	% N2	Static Press	Comments
5 to 15	CWHMW20R	5/10/2016 11:48:13AM	9	132.4	0.0		-29.77	NSPS/EG CAI,Inc. Flow/Vac
5 to 15	CWHMW20R	5/10/2016 11:48:13AM	3	132.4	0.0		-31.39	NSPS/EG CAI,Inc. Flow/Vac
15+	CWHMW20R	[illegible]/2016 [illegible]PM	[illegible]	[illegible]	0.0		[illegible]	NSPS/EG CAI,Inc. Flow/Vac
15+	CWHMW20R	[illegible]/2016 [illegible]PM	[illegible]	[illegible]	0.0		[illegible]	NSPS/EG CAI,Inc. Flow/Vac
0 to 5	CWHMW80R	4/14/2016 2:22:18PM	Initial	142.0	0.0		-50.10	NSPS/EG CAI,Dec. Flow/Vac ,Orifice Changed
OK	CWHMW80R	4/14/2016 2:22:18PM	0	128.0	0.0		-36.70	NSPS/EG CAI,Dec. Flow/Vac ,Orifice Changed
0 to 5	CWHMW80R	5/9/2016 3:10:47PM	Initial	141.2	0.0		-46.10	NSPS/EG CAI,No Adj. Made
0 to 5	CWHMW80R	5/9/2016 3:10:47PM	0	141.1	0.0		-45.92	NSPS/EG CAI,No Adj. Made
0 to 5	CWHMW80R	5/10/2016 11:41:39AM	1	140.8	0.0		-48.14	NSPS/EG CAI,Inc. Flow/Vac ,Adjusted for Odor/SEM
0 to 5	CWHMW80R	5/10/2016 11:41:39AM	1	140.8	0.0		-50.97	NSPS/EG CAI,Inc. Flow/Vac ,Adjusted for Odor/SEM
15+	CWHMW80R	[illegible]/2016 12:20:27PM	16	[illegible]	0.0		[illegible]	NSPS/EG CAI,Inc. Flow/Vac ,Adjusted for Odor/SEM
15+	CWHMW80R	[illegible]	16	141.6	0.0		-43.10	NSPS/EG CAI,Inc. Flow/Vac ,Adjusted for Odor/SEM
15+	CWHMW80R	6/1/2016 12:15:05PM	23	142.1	0.0		-62.92	NSPS/EG CAI,Fully Open Inc. Flow/Vac ,Adjusted for Odor/SEM
15+	CWHMW80R	6/1/2016 12:14:[illegible]PM	23	141.1	0.0		-54.17	NSPS/EG CAI,Fully Open Inc. Flow/Vac ,Adjusted for Odor/SEM
15+	CWHMW80R	7/1/2016 11:40:40AM	53	144.2	0.0		[illegible]	NSPS/EG CAI,Orifice Size Wrong
15+	CWHMW80R	7/1/2016 11:40:40AM	53	144.2	0.0		[illegible]	NSPS/EG CAI,Orifice Size Wrong

Results for Nitrogen (N2)

Range	Device ID	Monitoring Date/Time	Days Exceeded	% N2	% O2	Static Press	Gas Temp	Comments

WM01680

ATTACHMENT 2

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
USEPA GAS WELL VARIANCE APPROVALS AND REQUESTS

Gas Well	Approved Temp	USEPA Approval Date
MW07R1	145 F	10/31/13
MW08	141 F	10/31/13
MW09R	141 F	10/31/13
MW10R	145 F	10/31/13
MW17	147 F	10/31/13
MW19	144 F	10/31/13
MW20R	135 F	Requested 06/03/16
MW77	140 F	Requested 06/03/16
MW80R	143 F	Requested 07/03/14 Reiterated Request 06/03/16

WASTE MANAGEMENT
601 Madison Road
East St Louis, IL 62201
(618) 271-6788
(618) 271-1227 Fax

June 3, 2016

USEPA (AE-17J) – Air & Radiation Division
Air Enforcement and Compliance Assurance Branch
77 West Jackson Boulevard
Chicago, Illinois 60604

Cottonwood Hills Recycling and Disposal Facility - Site I.D. No. 163075AAL
Request for Higher Operating Temperatures in Landfill Gas Wells MW20R, MW77 and MW80R

Dear Sir/Madam:

This letter is written to provide notification that the temperature in landfill gas extraction wells MW20R, MW77 and MW80R exceeded the 55°C (131°F) temperature limit and to request approval of a higher operating temperature. Please note a request for a higher operating temperature in gas well MW80R was previously request on July 3, 2014 and a response was never received from the USEPA. The temperature variance requests are discussed below:

INTRODUCTION

In order to properly operate some wells with a vacuum and to collect sufficient volumes of gas from the wells a higher operating temperature is needed. Typically a vacuum of at least 5 to 10 inches of water (and sometimes more depending on type of waste, well depth, etc) is generally needed to withdraw landfill gas from a well but is based on "tuning" a well to withdraw the maximum amount of gas without compromising the decomposition process and methane generation. The temperature can sometimes be reduced by lowering the well vacuum to a minimal amount (generally less than 0.5 inches of water) but this reduces the amount of landfill gas collected and can increase the possibility of landfill gas not being captured/controlled. Therefore, a higher operating temperature is needed in some wells for increased landfill gas capture/control so that they do not have to be operated at "barely open" or minimal vacuum.

MW20R

Landfill gas extraction well MW20R was installed on August 20, 2012 and subsequently connected to the gas collection header system. The first readings on the gas extraction well were taken on September 20, 2012 and initial readings were below the 55°C (131°F) temperature limit (see attached table of recent data) with good gas flows. Gas well

temperatures slowly increased during the operation of the well and the flows and gas quality remained good (methane above 50%, low oxygen levels, and low carbon monoxide levels). The reading on April 14, 2016 was slightly above the 55°C (131°F) and the vacuum was adjusted to reduce the temperature (see the attached table). Subsequent monthly readings were also slightly above the 55°C (131°F) and the vacuum was adjusted each time to try and reduce the temperature. In order to properly operate the well and capture/control landfill gas, the facility needs to be able keep a greater vacuum on the well which will slightly increase the temperature. There has not been any smoke, subsidence nor evidence of fire at the well. Therefore, this letter **requests a temperature variance of 135°F be approved for gas well MW20R** which will allow the facility to properly operate the well with a higher vacuum and to capture/control the landfill gas being generated.

MW77

Landfill gas extraction well MW77 was installed on November 12, 2010 and subsequently connected to the gas collection header system. The initial readings were below the 55°C (131°F) temperature limit (see attached table of recent data) with good gas flows. Gas well temperatures slowly increased during the operation of the well and the flows and gas quality remained good (methane above 50%, low oxygen levels, and low carbon monoxide levels). The reading on April 14, 2016 was above the 55°C (131°F) and the vacuum was adjusted to try to reduce the temperature (see the attached table) but the resulting temperature was still above the limit. The well temperature remained above the limit with subsequent attempts to adjust vacuum (both up and down) to try to reduce temperature. In order to properly operate the well and capture/control landfill gas, the facility needs to be able keep a sufficient vacuum on the well. There has not been any smoke, subsidence nor evidence of fire at the well. Therefore, this letter **requests a temperature variance of 140°F be approved for gas well MW77** which will allow the facility to properly operate the well with a sufficient vacuum to capture/control the landfill gas being generated.

MW80R

A temperature variance request was originally submitted to the USEPA on July 3, 2014 (see attached request) but a response was never received. The facility has adjusted the vacuum in order to reduce the temperature but as a result landfill gas captured/controlled also decreased. In order to properly operate the well and capture/control landfill gas, the facility needs to be able keep a sufficient vacuum on the well. There has not been any smoke, subsidence nor evidence of fire at the well. Therefore, this letter **reiterates the original requests for a temperature variance of 143°F be approved for gas well MW80R** which will allow the facility to properly operate the well with a sufficient vacuum to capture/control the landfill gas being generated and help prevent any surface emissions monitoring exceedences.

Please note there are no indications of fire, nor smoke, nor subsidence around the wells, nor elevated CO readings. There is also no reason to believe there are any structural problems related to the operation of the wells with higher temperatures since oxygen levels in the well are currently less than 5%.

If you require additional information, please call me at (314) 568-2025.

Sincerely,
Waste Management of Illinois, Inc.

Ernest H Dennison, PE.
District Engineer

Cc: IEPA-BOA-Compliance and Enforcement Section
1021 North Grand Avenue East
Springfield, Illinois 62702

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
LANDFILL GAS EXTRACTION WELL MW20R

Device ID	Date Time	CH4 %	CO2 %	O2 %	Initial Static Pressure ("H2O)	Initial Temperature (Deg F)	Adjusted Temperature (Deg F)	Adjusted Static Pressure ("H2O)	Initial Flow SCFM	Adjusted Flow SCFM	CO ppm
MW20R	1/30/2015 13:31	58.1	41.0	0.0	-25.2	128	128	-25.0	80	81	
MW20R	2/25/2015 13:36	58.7	40.8	0.4	-32.2	128	129	-31.9	75	75	
MW20R	3/18/2015 11:22	57.9	41.1	0.0	-34.0	126	126	-33.9	65	68	
MW20R	4/28/2015 13:33	58.8	41.1	0.0	-33.9	127	127	-34.1	70	70	
MW20R	5/27/2015 14:01	57.0	39.7	0.1	-35.6	129	128	-35.4	65	67	
MW20R	6/29/2015 13:55	59.0	40.9	0.0	-37.4	127	127	-37.4	74	73	
MW20R	7/29/2015 15:41	59.1	40.8	0.0	-48.6	130	129	-48.3	73	81	
MW20R	8/17/2015 14:56	59.8	40.0	0.2	-40.2	127.8	128.6	-40.1	64.7	68.1	
MW20R	9/22/2015 12:45	59.5	40.4	0.0	-18.1	128	127	-17.9	45	44	
MW20R	10/22/2015 13:23	56.1	40.4	0.0	-14.1	128	128	-14.7	31	31	
MW20R	11/20/2015 14:47	59.0	40.9	0.0	-42.3	124	123	-44.1	56	63	
MW20R	12/7/2015 15:12	58.3	41.6	0.0	-46.6	127	127	-47.4	59	63	
MW20R	1/27/2016 13:05	55.0	40.6	0.7	-48.8	128	128	-49.0	54	56	
MW20R	2/22/2016 14:58	45.7	32.8	0.5	-48.5	125	125	-42.2	63	46	
MW20R	3/23/2016 12:55	58.4	40.9	0.1	-36.3	123	123	-37.0	48	52	
MW20R	4/14/2016 14:07	57.5	42.5	0.0	-42.1	131.9	130.6	-32.1	49.1	36.6	
MW20R	5/9/2016 15:25	57.5	42.5	0.0	-28.3	132.4	130.9	-20.0	22.2	17.4	< 50
MW20R	6/1/2016 13:41	59.7	40.1	0.0	-26.1	132.2	132.4	-28.1	29.6	31.6	

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
LANDFILL GAS EXTRACTION WELL MW77

Device ID	Date Time	CH4 %	CO2 %	O2 %	Initial Static Pressure ("H2O)	Initial Temperature (Deg F)	Adjusted Temperature (Deg F)	Adjusted Static Pressure ("H2O)	Initial Flow SCFM	Adjusted Flow SCFM	CO ppm
MW77	1/30/2015 13:37	57.3	42.6	0.0	-18.1	126	127	-18.3	62	62	
MW77	2/25/2015 13:40	57.0	42.7	0.1	9.8	62	57	9.7		1	
MW77	2/25/2015 13:41	56.8	43.1	0.0	5.4	77	79	5.8	10	4	
MW77	3/3/2015 13:02	56.3	43.0	0.6	-3.0	112	112	-3.3	55	71	
MW77	3/18/2015 13:17	56.6	43.3	0.0	1.7	60	59	1.2			
MW77	3/18/2015 13:19	56.5	43.4	0.0	1.1	60	61	1.1			
MW77	4/1/2015 12:03	57.1	42.8	0.0	-9.9	93	100	-11.0	37	39	
MW77	5/27/2015 14:04	56.5	43.1	0.0	3.7	90	86	0.9		18	
MW77	5/27/2015 14:06	55.8	43.3	0.0	0.6	87	87	0.9	11	10	
MW77	6/3/2015 12:42	55.8	44.1	0.0	-1.1	103	99	-1.4	21	22	
MW77	6/29/2015 14:04	57.6	42.3	0.0	-8.9	125	126	-11.7	12	21	
MW77	7/29/2015 15:53	56.4	43.5	0.0	-7.9	127	129	-8.6	1	11	
MW77	8/27/2015 12:15	55.9	44.0	0.1	-14.0	129.7	129.4	-15.9	12.3	20.5	
MW77	9/22/2015 12:52	57.5	42.4	0.0	-11.3	129	127	-12.6	24	25	
MW77	10/22/2015 13:19	56.0	40.6	0.1	-6.9	128	129	-7.0	14	12	
MW77	11/20/2015 14:53	57.1	42.8	0.0	-5.9	100	113	-6.0	26	25	
MW77	12/4/2015 12:57	51.7	39.5	0.8	-24.5	126	127	-24.6	23	23	
MW77	1/27/2016 12:55	54.8	41.9	0.0	-28.9	127	126	-29.6	18	25	
MW77	2/22/2016 15:07	54.8	41.3	0.0	-8.9	94	92	-8.8	6	11	
MW77	3/23/2016 13:13	50	37.5	0.6	-29.9	124	124	-29.8	22	22	
MW77	4/14/2016 14:26	56.3	42.6	0	-34.45	136.3	137.1	-37.63	31.1	33.6	
MW77	4/14/2016 14:30	56.3	42.9	0	-39.08	137.6	136	-33.55	28.4	20.2	
MW77	4/27/2016 12:32	56.3	42.3	0	-26.41	131.2	129.5	-24.93	14.6	0	
MW77	5/9/2016 16:33	56.6	43.4	0	-30.94	136.4	136.4	-30.94	25	28.4	
MW77	5/10/2016 11:19	57.3	41.6	0.2	-31.89	134.7	135	-33.05	27.8	31.4	< 50
MW77	5/25/2016 12:15	54.6	42.6	0	-48.62	137.1	137	-47.9	32.1	30.1	
MW77	6/1/2016 13:24	54.8	40.8	0	-46.23	138	138	-46.41	27.9	29.9	

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
LANDFILL GAS EXTRACTION WELL MW80R

Well	Date	CH4 %	CO2 %	O2 %	Initial Static Pressure ("H2O)	Initial Temperature (Deg F)	Adjusted Temperature (Deg F)	Adjusted Static Pressure ("H2O)	Initial Flow SCFM	Adjusted Flow SCFM	CO ppm
MW80R	1/22/2015 11:05	57.1	42.4	0	-5.2	128	128	-6.1	19	18	
MW80R	2/25/2015 13:30	54.8	45.1	0	-8.8	124	128	-10.8	20	63	
MW80R	3/18/2015 11:51	55.8	44.1	0	-16.4	125	125	-18.2	64	91	
MW80R	4/28/2015 12:57	55.2	44.7	0	-18.5	130	128	-18.5	73	74	
MW80R	5/27/2015 13:53	52.6	44.7	0	-19	127	129	-19.7	31	33	
MW80R	6/29/2015 13:35	54.6	45.2	0	-32.8	138	135	-21.4	34	4	
MW80R	6/29/2015 13:38	56.2	43.4	0.2	-15.6	129	129	-14.9	2	5	
MW80R	7/29/2015 15:28	28.7	23.2	8	-3.4	124	128	0	21	39	
MW80R	7/29/2015 15:33	53.7	41.5	0.7	-0.4	125	125	-0.8		11	
MW80R	8/17/2015 14:33	53.3	43.1	0.7	-1.86	129	122.5	-2.26	28.3	31.7	
MW80R	8/27/2015 12:51	55.4	44.6	0	-1.27	121.5	126.2	-3.42	6.6	18.2	
MW80R	9/22/2015 12:56	54.9	45	0	-13.3	122	125	-19.3	32	80	
MW80R	10/22/2015 14:29	50.8	45.1	0	-21.2	117	118	-21.1	36	35	
MW80R	11/20/2015 13:38	1.5	2.9	20.3	-17	52	51	-1.1	261	71	
MW80R	11/20/2015 13:43	0.1	0.4	21.5	-1.1	54	54	-0.2	57	58	
MW80R	12/2/2015 13:25	54.2	45.1	0	-0.8	82	77	-0.5	4	8	
MW80R	1/27/2016 13:18	38.6	39.8	2.6	-2.8	106	99	-1.9	20	12	
MW80R	2/22/2016 13:37	54.6	42.8	0.7	-2.5	87	87	-2.1	67	66	
MW80R	3/28/2016 13:42	41.5	38.5	3.5	-1.7	87	67	-0.3	92	60	
MW80R	4/14/2016 14:22	54.2	45.7	0	-50.1	142	128	-36.7	22	46	
MW80R	5/9/2016 15:10	53.6	46.4	0	-46.1	141.2	141.1	-45.92	14.2	15.5	
MW80R	5/10/2016 11:41	54.9	44.6	0	-48.14	140.8	140.8	-50.97	20.5	26.4	< 10
MW80R	5/25/2016 12:26	53.8	45.7	0	-52.36	141.6	141.6	-53.19	15.3	15.9	
MW80R	6/1/2016 12:18	53.7	44.3	0	-52.92	142.1	141.7	-54.07	15.2	15.4	

WASTE MANAGEMENT
OF ILLINOIS
601 Madison Road
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July 3, 2014

Ms. Linda Rosen
USEPA (AE-17J) – Air & Radiation Division
Air Enforcement and Compliance Assurance Branch
77 West Jackson Boulevard
Chicago, Illinois 60604

Cottonwood Hills Recycling and Disposal Facility - Site I.D. No. 163075AAL
Request for Higher Operating Temperatures in Landfill Gas Well MW80R

Dear Ms. Rosen:

This letter is written to provide notification that the temperature in landfill gas extraction well MW17 exceeded the 55°C (131°F) temperature limit and to request approval of a higher operating temperature. The temperature variance request is discussed below:

INTRODUCTION

In order to properly operate some wells with a vacuum and to collect sufficient volumes of gas from the wells a higher operating temperature is needed. Typically a vacuum of at least 5 to 10 inches of water (and sometimes more depending on type of waste, well depth, etc) is generally needed to withdraw landfill gas from a well but is based on "tuning" a well to withdraw the maximum amount of gas without compromising the decomposition process and methane generation. The temperature can sometimes be reduced by lowering the well vacuum to a minimal amount (generally less than 0.5 inches of water) but this reduces the amount of landfill gas collected and can increase the possibility of landfill gas not being captured/controlled. Therefore, a higher operating temperature is needed in some wells for increased landfill gas capture/control so that they do not have to be operated at "barely open" or minimal vacuum.

MW80R

Landfill gas extraction well MW80R was installed on August 15, 2012 and subsequently connected to the gas collection header system. The first readings on the gas extraction well were taken on September 20, 2012 and initial readings were below the 55°C (131°F) temperature limit (see attached table) with good gas flows. Gas well temperatures increased during the operation of the well as refuse continued to decompose and generate heat and the well temperature exceeded the 55°C (131°F) temperature limit in January

2014. The well vacuum was adjusted to a minimal vacuum and temperatures dropped below the limit after adjusting however the flow from the well is extremely low (less than 10 cfm) at a low vacuum. In June 2014 the vacuum was increased to try and remove additional landfill gas (increase flow) in order to make sure the facility controls the landfill gas generated. The increase in vacuum increased the temperature in the well so the vacuum was once again reduced to help reduce gas well temperature. CO reading were taken and all CO levels were 50 ppm or less. There not been any smoke, subsidence nor evidence of fire at the well. Therefore, this letter **requests a temperature variance of 143°F be approved** (highest observed temperature) which will allow the facility to properly operate the well with a higher vacuum and to collect a greater volume of landfill gas being generated. At the requested variance it appears the facility can remove approximately 60 cfm of gas for proper control while the reduced vacuum would only allow approximately 10 cfm of gas removed.

We do not believe the elevated gas well temperature with increased vacuum is due to subsurface oxidation since there are no indications of fire, nor smoke, nor subsidence around the wells, nor elevated CO readings. There is also no reason to believe there are any structural problems related to the operation of the well with higher temperatures since oxygen levels in the well are less than 5%.

If you require additional information, please call me at (314) 568-2025.

Sincerely,
Waste Management of Illinois, Inc.

Ernest H Dennison, PE.
District Engineer

Cc: IEPA-BOA-Compliance and Enforcement Section
1021 North Grand Avenue East
Springfield, Illinois 62702

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
LANDFILL GAS EXTRACTION WELL MW80R

Device ID	Date Time	CH4 %	CO2 %	O2 %	Initial Static Pressure ("H2O)	Initial Temperature (Deg F)	Adjusted Temperature (Deg F)	Adjusted Static Pressure ("H2O)	Initial Flow SCFM	Adjusted Flow SCFM	CO ppm
MW80R	9/20/2012 10:47	43.5	41.4	0.2	-29.0	121	121	-24.0	201	159	
MW80R	10/3/2012 14:32	45.8	41.2	0.0	-20.5	122	122	-13.6	129	76	
MW80R	11/1/2012 9:37	52.9	44.1	0.0	-7.1	122	122	-7.1	72	70	
MW80R	12/11/2012 14:53	56.3	43.0	0.0	-7.4	125	125	-7.4	70	67	
MW80R	1/17/2013 14:03	52.3	42.3	0.1	-7.1	125	125	-7.7	68	70	
MW80R	1/28/2013 13:14	48.0	41.8	0.0	-7.7	125	125	-7.5	78	76	
MW80R	2/22/2013 11:08	47.5	38.3	0.2	-6.1	124	124	-6.1	57	57	
MW80R	3/22/2013 9:57	47.6	39.2	0.2	-6.4	124	125	-6.4	58	58	
MW80R	4/9/2013 10:36	48.0	39.4	0.0	-6.5	125	126	-6.6	64	65	
MW80R	5/2/2013 14:05	50.6	39.5	0.0	-7.0	126	127	-7.0	67	66	
MW80R	6/20/2013 11:59	59.9	39.9	0.1	-7.4	128	128	-8.1	57	66	
MW80R	7/31/2013 13:45	57.6	42.3	0.0	-4.8	127	127	-5.1	37	39	
MW80R	8/8/2013 13:21	57.3	42.6	0.0	-0.2	128	128	-1.0	27	30	
MW80R	8/28/2013 12:08	45.3	32.8	3.0	-0.9	126	126	-0.4	33	25	
MW80R	9/24/2013 13:03	54.0	37.5	1.0	-0.2	128	128	-0.3	24	23	
MW80R	10/2/2013 13:51	50.9	34.0	2.8	-1.0	122	120	-1.0	38	39	
MW80R	11/25/2013 13:53	59.2	40.7	0.0	-0.4	119	127	-0.6		30	
MW80R	12/4/2013 12:42	59.1	40.0	0.1	-0.4	112	113	-0.8	26	22	
MW80R	1/30/2014 10:14	56.3	43.6	0.0	-2.5	128	131	-3.0	27	29	10
MW80R	1/30/2014 10:17	56.8	43.1	0.0	-5.1	132	130	-2.1	31	12	
MW80R	2/25/2014 11:33	58.3	41.6	0.0	-4.9	123	126	-5.9	4	18	
MW80R	3/13/2014 11:39	58.1	41.8	0.0	-1.0	127	128	-1.3	4	16	
MW80R	4/29/2014 12:15	57.0	42.9	0.0	-0.6	128	128	-0.9	8	9	
MW80R	5/27/2014 12:35	57.9	40.0	0.0	-3.0	128	126	-1.9	21	15	
MW80R	6/16/2014 12:24	56.7	42.7	0.0	-4.2	137	140	-1.4	37	10	
MW80R	6/16/2014 12:26	57.3	42.6	0.0	-1.1	140	140	-0.7	8	8	
MW80R	7/1/2014 10:51	58.0	41.9	0.0	-16.4	143	137	-0.2	57	15	50
MW80R	7/1/2014 10:56	56.4	43.5	0.0	-0.2	133	132	-0.1	19	16	50

ENVIRONMENTAL INFORMATION LOGISTICS, LLC

October 22, 2015

To: Denny Dennison

From: Laura Niemann

RE: Decommissioning of MW-17

Denny:

You requested an ROI evaluation for the wells/collectors in the vicinity of MW-17, which you are planning to decommission due to damage. However, since this is not a permanent removal (the site plans to replace the well in the future during the next planned gas construction cycle), there is no need to submit a formal notification of decommissioning to IEPA via a CAAPP minor modification. This would signal an intent to NEVER put a well back in this location, which is not the case.

Attached please find a map with calculated and drawn ROI's for the wells and collectors immediately adjacent to MW-17, including:

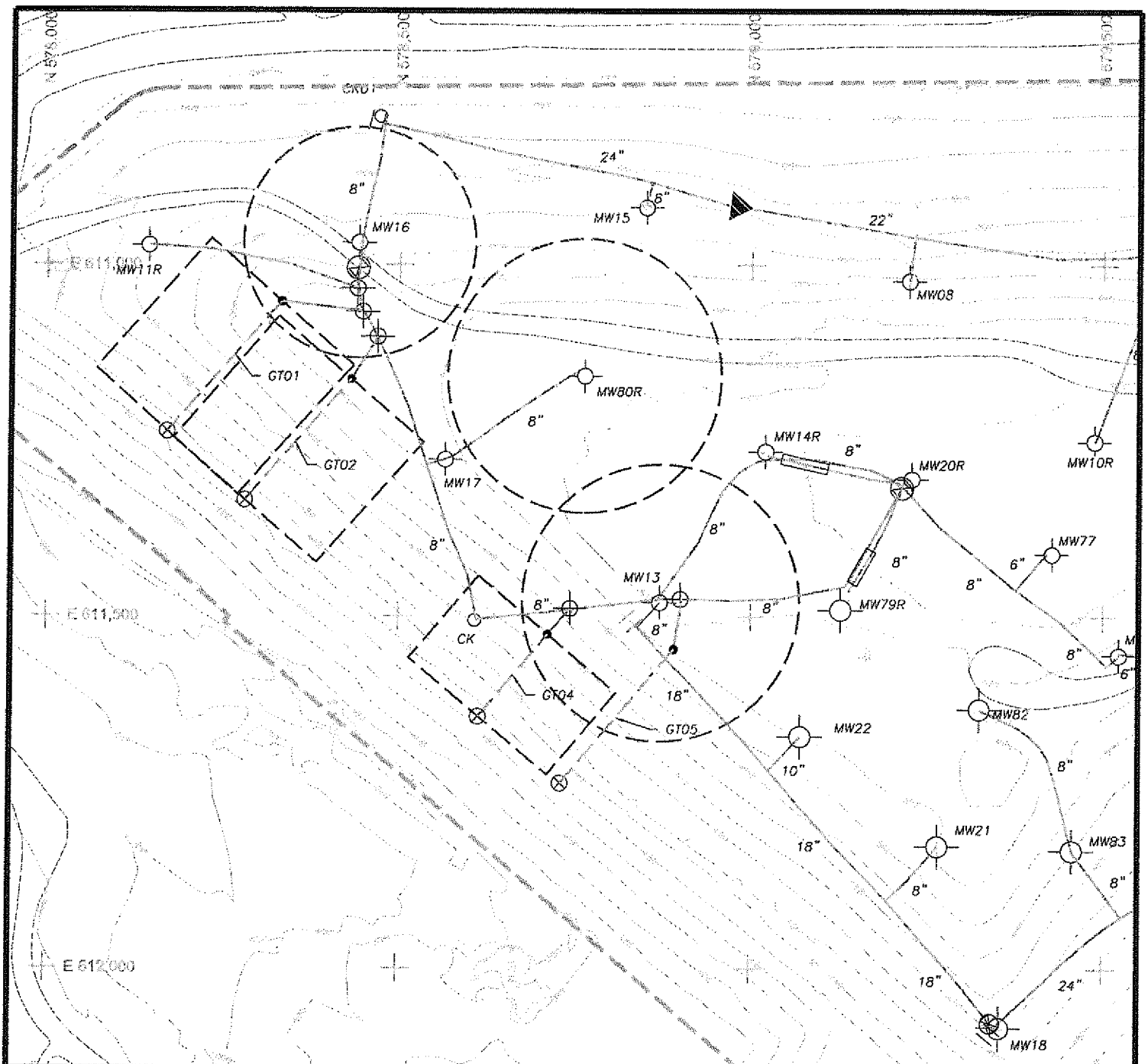
- MW-80R
- MW-13
- MW-16
- Trenches GT-01, GT-02 & GT-04

Your technician provided wellfield data for the past several months, and there is good agreement between the data and the predicted gas flows on the attached ROI spreadsheets. According to the ROI calculations, there should be plenty of coverage for landfill gas collection in this area even if well MW-17 is temporarily removed.

Your approved NSPS design plan and CAAPP renewal permit allow the site flexibility to collect gas in a number of different ways, per Condition No. 4.1.2.c.i.A.II.2(a), with the caveat that these locations be monitored pursuant to the NSPS and meet the required operational standards:

> *"The permittee may utilize temporary gas extraction wells, horizontal collection trenches and/or leachate collection system for LFG extraction until permanent extraction wells can be installed once the area is at final grade....."*

MW-17 can be characterized as a temporary well since it would have required replacement at some point – it was installed at least 75 feet shy of final grade and has been raised many times. Since there are other types of collectors in the vicinity that are operational and are collecting landfill gas, and since the area still has more lifts of waste to be placed, I do not believe this well needs to immediately be re-installed until the area is closer to being at final grades OR surface emissions exceedances are detected that cannot be repaired by conventional means (i.e. soil placement).



LEGEND:

- APPROXIMATE WASTE BOUNDARY
- EXISTING FINAL COVER
- TOPOGRAPHY
- MW03 — INSTALLED VERTICAL EXTRACTION WELL
- EXISTING GAS FLOW CONTROL VALVE
- CK01 — EXISTING CONDENSATE TRAP
- EXISTING LFG SYSTEM PIPE
- EXISTING LFG SYSTEM GAS TRENCH
- LOCATION OF SOLID/PERFORATED PIPE TRANSITION
- EXISTING LFG HORIZONTAL WELLHEAD
- EXISTING INSTALLED LFG HORIZONTAL WELL SUMP
- WELL ROI

100' 0' 100' 200'

SCALE: 1" = 200'

PREPARED BY

EIL ENVIRONMENTAL INFORMATION LOGISTICS, LLC

PREPARED FOR

WM WASTE MANAGEMENT

FIGURE 1

GAS WELL ROI

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY

150308

OCTOBER 2015

2 3 4 5

Trench Radius of Influence Calculation

Cottonwood Hills RDF

Revised: 5/1/97

PRINT

Assumes standard conditions are 14.7 psia, 60 Deg. F.

LEACHATE TRENCH NO.	GAS GENERATION RATE (FT3/LBm*YR)	PERMEABILITY FACTOR x 10E-11 (FT2)	REFUSE DENSITY (LBm/FT3)	GAS TEMPERATURE (DEG. F)	Trench Length (FT)	Trench Depth (FT)	Vertical Extent Limiting Factor	Vertical Influence (FT)	APPLIED VACUUM (in WC)	ROI (FT)	GAS FLOW (SCFM)
GT001	0.105	2.268	59.25	80	220	20	2.00	20.00	2.07	136	11
GT002	0.105	2.268	59.25	80	220	20	2.00	20.00	2.07	136	11
GT–4	0.105	2.268	59.25	80	180	20	2.00	20.00	1.86	129	9

ATTACHMENT 3

COTTONWOOD HILLS GAS COLLECTION SYSTEM
REPORTING FOR NON OPERATING PERIODS OF CONTROL DEVICE
3000 SCFM OPEN FLARE

Time Out of Service	Description of Outage	Time Back In Service	Down Time Hours	Performed By
1/2/16 7:32 PM	480v Power supply lines damaged, no power.	1/4/16 4:16 PM	44.7	MM
1/4/16 10:26 AM	Missing flare card data due to power loss.	1/4/16 12:12 PM	1.8	MM
1/4/16 5:36 PM	Contractor fixing 480v power supply to flare skid.	1/6/16 1:36 PM	44.0	MM
1/10/16 9:14 AM	Pulled and cleaned Flow meter	1/10/16 10:48 AM	1.6	MM
1/10/16 10:56 AM	Ran out of Nitrogen	1/10/16 12:36 PM	1.7	MM
1/17/16 9:50 AM	Pulled and cleaned Flow meter	1/17/16 11:08 AM	1.3	MM
1/22/16 4:46 AM	Pulled Flame Arrestor and Blower Maintenance	1/22/16 12:38 PM	7.9	MM
2/24/16 3:04 PM	Loss of flare flame due to high winds, auto shut down	2/24/16 7:06 PM	4.0	MM
3/15/16 9:22 PM	Loss of flare flame due to high winds, auto shut down	3/16/16 12:36 AM	3.2	MM
4/15/16 9:08 AM	Flare shut down for gas collection lateral line repair	4/15/16 10:32 AM	1.4	MM
6/18/16 8:14 AM	Cube relay prevented autorestart - relay replaced	6/18/16 12:36 PM	4.4	MM
6/30/16 12:46 PM	Pilot ingniter failure - pilot igniter replaced	6/30/16 8:48 PM	8.0	MM
		TOTAL	123.9	

Per Sec. 60.757 : "Each owner or operator...shall include the following information with the annual report... description and duration of all periods when the control device was not operating for a period exceeding one hour and length of time the control device was not operating."

Verified by :
Mike McElvain Gas Technician

WM01696

ATTACHMENT 4

COTTONWOOD HILLS RECYCLING AND DISPOSAL FACILITY
QUARTERLY SURFACE SCAN MONITORING EXCEEDENCES
FOR JANUARY 1, 2016 TO JUNE 30, 2016 REPORT PERIOD

Quarter	Date	Location		Methane	Corrective Action	Date	Methane	Additional Corrective Action	Date	Methane
		North	West	Conc ppm			Conc ppm			Conc ppm
1st	02/01/16			All < 200	None Required			NA		
2nd	06/27/16			All < 300	None Required			NA		

Surface Emissions Monitoring performed by gas technicians Mike McElvain and/or Brad Anderson

WM01698